



QUICK RESPONSE

*Saving life and property through effective licensing, plan review,
and inspection of fire protection systems.*

December 2007

PREACTION SPRINKLER SYSTEM

NFPA 13 defines a **preaction sprinkler system** as “a sprinkler system employing automatic sprinklers that are attached to a piping system that contains air that might or might not be under pressure, with a supplemental detection system installed in the same areas as the sprinklers.”

A preaction type sprinkler system employs the basic concept of a dry pipe system in that the sprinklers are closed and water is not normally contained within the pipes. One difference, however, is how water is admitted to the system. Water introduction into the system’s piping is initiated by opening of a normally closed, mechanically latched valve known as a preaction valve. Means of operating the preaction valve depends on which of the three types of preaction systems, **non-interlock**, **single interlock** or **double interlock**, is installed. Another difference is that a preaction system utilizes a means of flame, heat, or smoke detection.

Preaction valve operation is dependent upon one or two of the following events occurring, *sprinkler activation* and *detection device activation*. A **non-interlock** system requires only one of either event to occur before water is admitted into the system. A **single interlock** system is activated only upon the event of detection device activation. Two separate events must happen; sprinkler activation and detection device activation, before water is admitted into a **double interlock** system.

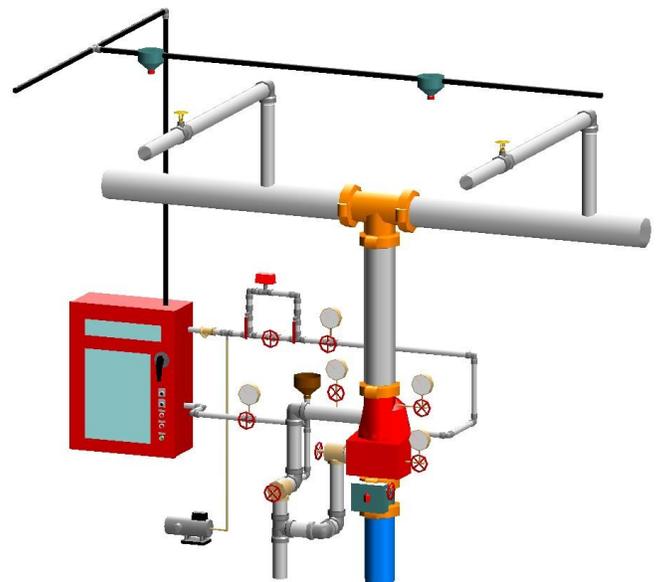
Preaction systems, particularly the double interlock system, are normally used to protect properties where accidental water discharge is a significant concern. Even though premature or accidental sprinkler system discharge is extremely rare, some property owners prefer these types of systems.

Types of preaction systems

Non-interlock system admits water to sprinkler piping upon operation of detection devices or automatic sprinklers.

Single interlock system admits water to sprinkler piping upon operation of detection devices.

Double interlock system admits water to sprinkler piping upon operation of both, detection devices and automatic sprinklers.



Quick Response is presented monthly by the
Minnesota State Fire Marshal – Fire Protection Section

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